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Sequence of the *psbA* gene from wild type and triazin-resistant *Nicotiana plumbaginifolia*Anikó Páy*, Marvin A. Smith⁺, Ferenc Nagy and László Márton[§]

Biological Research Center of the Hungarian Academy of Sciences, Institute of Plant Physiology, H-6701 Szeged, PO Box 521, Hungary
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The sequence of the chloroplast-encoded *psbA* gene from the wild type *Nicotiana plumbaginifolia* was compared to that of the TBR2 terbuthrin-resistant mutant isolated from photomixotrophic cell cultures (1). Two nucleotides were found to have been changed in the mutant *psbA* gene. The change at position 791 results in a Ser-Asn amino acid substitution. The change at position 933 does not alter the amino acid sequence. The amino acid substitution described here is at the same position as in all *psbA* genes from triazin resistant mutants so far sequenced in higher plants (2, 3); however this is the first case when Serine is replaced by Asparagine.

-237
CCCCCCCCACCCACATACCATATCCAAATCTATCTCTGTAGAGAACTCGTATTTTCCCACTCA

CTTCATTAAAAATTTGATAGATCTACATACACTTGGTTCACACGATATATAGTCTATTACTCTTGAATACAAAGCTTCCATTTCTATTTTATTTATTTAGAAACTAGTGTCTGGGACCTCTGATGATTAATTAACCAAGATTTTACG

120
ATG ACT GCA ATT TTA GAG GAG GCG GAA AGC GAA AGC CTA TGG GGT GCG TTC TCT AAC TGG ATA ACT AGC ACT GAA AAC GGT CTT TAC ATT GCA TGG TTT GGT GTT TTG ATG ATC CCG T

240
TTA TTT AGC GCA ACT TCT GTA TTT ATT ATT GCG ATT GGT GGT GCA GAA GAC ATT GAT GGT ATT GGT GCA GGT GGT TGA GGG GGT CTA GTT TAC GGA AAC AAT ATT ATT TCG GGT

360
GCG ATT ATT GGT ACT TCT GCA GGT ATA GGT TTA CAT TTT TAC CCA ATC TGG GAA GCG GCA TCG GGT GAT GAA TGG TTA TAC AAC GGT GGT GGT TAT GAA CTA ATT GTT CTA CAC TTC TTA

480
CTT GCG GCA GGT TCT TAC ATG GGT GAG TGG GAG CTT ACT TTC GGT GTG GGT ATG GCA GGT TGG ATT GGT GTT GCA TAT TGA GAT GGT GGT GCA GGT GGT AGC GCA GGT TTT TCG TTT ATC

600
TAC CCA ATC GGT CAA GCA AGT TTT TCT GAT GGT ATG GGT CTA GCA ATC TCT GGT ACT TTC AAT TTC ATG ATT GTA TTC CAG GGT GAG CAC AAC ATC GTT ATG CAC CCA TTT CAC ATG TTA

720
GCG GCA GGT GGT TCG GCA TTT ACT ATG CAT GGT TCG TTT GCA ATC TCT AGT TTT ATG AGC GAA AGC AGA GAA AAT GAA TET AAT GAA GGT TAC AGA TTT GGT GGT

840
CAA GAG GAA GAA ACT TAT AAC ACT GCA GCG GGT CAT GGT TAT TTT TCG CCA TTT ATC TTC CAA TAT GGT ACT TTT CAC AAC TCT GGT TCG TTA CAC TTC TTC CTA GGT GGT TCG GGT

960
GTA GGT TCG TTT AGC GGT TTA GGT ATC AGC ACT ATG TTT CAC CTA AAT GGT TTT AAT TTC AAC CAA TCT GAA GGT GAA GGT GGT GGT GGT GGT GGT GGT GGT GGT GGT GGT GGT

1080
ATT AGC GGT

1141
TTTTCACACACCCCAATATATCTTTCTTTCTTATGAGAGCGGTCTATT

Legend: The nucleotide and the deduced amino acid sequence of the *psbA* gene of *N. plumbaginifolia* is shown. The Ser-Asn substitution in the mutant *psbA* gene at codon 264 is boxed. The "silent" nucleotide-change at 933 position is also indicated. The *N. plumbaginifolia psbA* gene spans an *EcoRI*-*PstI* restriction endonuclease fragment of 0.9kb and a *PstI* fragment of 2.3kb.

*To whom correspondence should be addressed

Present addresses: ⁺ Graduate Section of Biochemistry, Brigham Young University, Provo, UT 84602 and [§] Institute of Biological Chemistry, Washington State University, Pullman, WA 99164-6340, USA

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